

Appl. No. 10/664,002
Amdt. Dated November 3, 2005
Reply to Office Action of June 3, 2005

Attorney Docket No. 89301.0002 (81788.0257)
Customer No.: 26021

This listing of claims will replace all earlier versions or listings of the claims.

Listing of Claims:

1. (Original) A semiconductor laser array comprising:
 - a GaAs substrate;
 - a first laser element portion provided on said substrate to release laser light of a first wavelength; and
 - a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,
 - said first laser element portion including a first cladding layer, an active layer formed by epitaxially growing a first semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a current-blocking layer to confine an electrical current injected into said first laser element portion,
 - said second laser element portion including a first cladding layer, an active layer formed by epitaxially growing a second semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a current-blocking layer to confine an electrical current injected into said second laser element portion, and
 - said current-blocking layer of said first laser element portion and said current-blocking layer of said second laser element portion are made of same semiconductor material.

2. (Previously Presented) The semiconductor laser array according to claim 1 wherein said first and second cladding layers of said first laser element portions are made of AlGaAs, and said first and second cladding layers of said second laser element portions are made of InGa_{1-x}Al_xP ($0 < x \leq 1$).

3. (Previously Presented) The semiconductor laser array according to claim 1 wherein group-V species included in said second cladding layer of said first laser element portion is not identical to group-V species

included in said current-blocking layer of said first laser element portion, and group-V species included in said second cladding layer of said second laser element portion is not identical to group-V species included in said current-blocking layer of said second laser element portion.

4. (Previously Presented) The semiconductor laser array according to claim 3 wherein said second cladding layers of said first and second laser element portions are made of same semiconductor material.

5. (Previously Presented) The semiconductor laser array according to claim 4 wherein said second cladding layers of said first and second laser element portions are made of InGaAlP.

6. (Previously Presented) The semiconductor laser array according to claim 4 wherein said second cladding layer of said second laser element portion is configured as a ridge stripe extending along laser cavity lengthwise directions and both sides of said ridge stripe is buried by said current-blocking layer.

7. (Previously Presented) The semiconductor laser array according to claim 4 wherein said first wavelength ranges about 780 nm as its center, and said second wavelength ranges about one of 635 nm, 650 nm and 685 nm as its center.

8. (Previously Presented) The semiconductor laser array according to claim 4 wherein said active layer of said first laser element portion includes an AlGaAs layer, and said active layer of said second laser element portion includes an In(Ga_{1-y}Al_y)P ($0 \leq y \leq 0.2$) layer.

9. (Previously Presented) The semiconductor laser array according to claim 8 wherein said active layer of said first laser element portion has a bulk structure and said active layer of said second laser element portion has a multiple-quantum well structure.

10. (Previously Presented) A semiconductor laser array comprising:
a GaAs substrate;
a first laser element portion provided on said substrate to release laser light of a first wavelength; and
a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,
said first laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to

cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

said second laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

11. (Previously Presented) The semiconductor laser array according to claim 10 wherein said second cladding layer of said second laser element portion is configured as a ridge stripe extending along laser cavity lengthwise directions and both sides of said ridge stripe is buried by said top layer.

12. (Previously Presented) The semiconductor laser array according to claim 10 wherein said first wavelength ranges about 780 nm as its center, and said second wavelength ranges about one of 635 nm, 650 nm and 685 nm as its center.

13. (Previously Presented) The semiconductor laser array according to claim 10 wherein said active layer of said first laser element portion includes an AlGaAs layer, and said active layer of said second laser element portion includes an In(Ga_{1-y}Al_y)P ($0 \leq y \leq 0.2$) layer.

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Amendments to the Drawings:

The attached sheets of drawings includes changes to FIGS. 24D, 26, 27, 28A, 28B and 29. These sheets, which include FIGS. 24D, 26, 27, 28A, 28B and 29, replace the original sheets including FIGS. 24D, 26, 27, 28A, 28B and 29. In FIG. 24D reference numbers 218 and 228 have been added to identify the third cladding layers from the underlying second cladding layers. FIGS. 26, 27, 28A, 28B and 29 have been designated as Prior Art as requested by the Examiner.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes